Construction equipment

wieland

Solutions for heavy duty construction equipment and vehicles

Taming beasts of burden

▲ Sales and Marketing Center in Bamberg

▲ Photo of the Bamberg headquarters

▲ STOCKO headquarters in Wuppertal

wieland group

automation
building
electronics

ACTIVE WORLDWIDE

With its staff of almost 2,000 employees, the Wieland Group is at home on all continents. Subsidiaries in Great Britain, France, Spain, Italy, Poland, Canada, the USA, China and Denmark speak for themselves. With a great number of representatives, Wieland Holding is active in almost all strategically important countries. Just a medium-size global player with a clear commitment to the German location where most of the products are still manufactured.

One company group, a thousand opportunities

The philosophy of the Wieland Group with its headquarters in Bamberg can be summarized that simply. The independent subsidiaries, Wieland Electric and STOCKO Contact, are active beneath Wieland Holding.

Together they cover an extraordinarily wide product portfolio in the field of electrical engineering and electronics. It comprises control cabinet engineering, industrial multipole connectors as well as overvoltage technology and building system technology.

Wieland Electric is active in most areas of automation technology and delivers as the industry's driver for innovation. Safety first – Wieland Electric is ideally positioned with its modular system solutions such as

Series 4000, ***samos***®, ***samos***® PRO and the new ***sensor*** PRO safety sensors.

podis®, the solution-oriented system for remote power distribution, and ***ricos*** TP, the latest development in the field of automation systems for heavy duty industrial requirements, are only two examples.

In the building installation system sector, Wieland Electric, with its ***gesis***® system, is the world market leader in pluggable electrical installation. With good reason do planners and architects of the tallest and most interesting construction projects worldwide, such as the Petronas Towers in Kuala Lumpur, rely on ***gesis***® components from Wieland. Wieland is the pioneer on a path toward the intelligent home by consistently developing its ***gesis***® product range, especially with regards to the demands of electronic networking.

Wieland Electric was founded in 1910 in Bamberg. With 800 staff members it is the largest subsidiary within the company group of Wieland Holding. With its numerous innovations, Wieland Electric has become a major supplier of electrical connection technology. Export share is currently at 58 %.

STOCKO Contact is located in North Rhine-Westphalia's Wuppertal and has been a member of the Wieland Group since 2001. The company can look back at a history of more than 100 years. STOCKO Contact is one of the biggest European manufacturers of connector systems and crimp contacts.

100 years young and full of innovative energy ...

this is the foundation of our company philosophy.
From this statement Wieland Electric will not just maintain, but expand its social responsibility into the future. Eco-friendly high-tech products, manufactured according to state-of-the-art production standards, an audited environmental management system and extensive investments in our facilities with cutting-edge environmental technologies are a matter of fact. A company policy that also commits us to the long term responsibility for the future of our families and children, as well as for the city of Bamberg, in addition to innovative system solutions for our customers. In our opinion, worldwide action and regional responsibility are united.

Construction equipment

Cutting-edge technology –
for heavy duty equipment

Where automotive and industrial-applications come together

Excavators, cranes, loaders, construction equipment etc. are all mobile, modern machines that have to master extremely diverse and sometimes very complex tasks.

Extreme mechanical stresses from impacts, shocks, vibrations, and falling rocks are another challenge for mobile equipment. Dust, dirt, heat, cold and humidity also affect the systems' sensors and control devices.

When selecting which solutions to use, it is necessary to account for the increased demands of these harsh environments. High quality and robust components able to meet the application requirements are a necessity.

Safety technology plays a particularly important role in this industry, encompassing all applications from tower cranes to off-road specialty vehicles. It is mandatory not only to ensure operator safety, but also to have a means to design and implement the ever increasing complexity and amount of safety functionality required by this equipment.

The components of Wieland Electric are in actuality units of a modular system. Precisely aligned with one another, they can be utilized to create unique installation topologies, and at the same time, fulfill all the industry's requirements safely, economically, and reliably.

Photo: Wirtgen GmbH, Windhagen/Deutschland

Everything under control.

Perfect solutions for construction equipment and specialty vehicles.

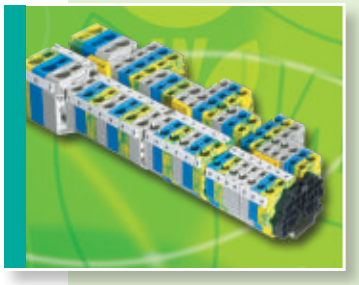
One manufacturer – multiple components, many areas of application

Wieland Electric delivers comprehensive solutions as well as individual components for construction equipment and special use vehicles.

The different components are used, for example, in lower cab instrument clusters, telematic systems, or in upper cabs, control cabinets, winch and drive systems.

The functionality of the vehicles and their cost effectiveness is significantly increased - maintenance and diagnostics are simplified with Wieland components.

revos
Heavy duty connectors

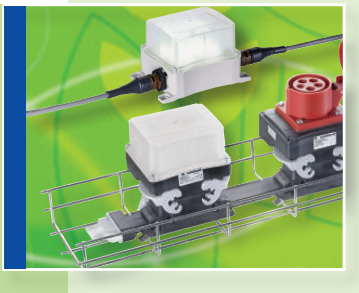


fasis / selos
DIN rail terminal blocks

safety
Modular
safety systems

interface
Power supplies
Relays
Lightning and
overvoltage protection

ricos TP
Field bus components



podis
LED lights on the
power bus system

Wieland applications in the boom-slewing unit and jib:
revos, fasis, selos, ricos TP

Wieland applications in the upper cab and the tower:
revos, fasis, selos, wiecon, ricos TP, ***podis***

Distributed power supply, reliable lightning and overvoltage protection, comprehensive relay technology, and pluggable electrical installation – just some of the applications for which Wieland offers highly-developed solutions.

Wieland applications in the lower cab and chassis, in the control cabinet and in the control unit:
revos, fasis, selos, safety, interface, ricos TP

Example of possible applications for Wieland products in a truck mounted crane.

revos **heavy duty connectors are specially designed for use in particularly rough conditions. The powder-coated aluminum housing stands up to even the harshest environmental influences.**

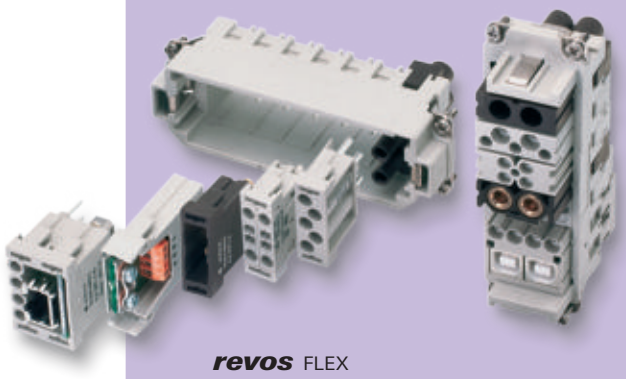
revos – Reliably connected with heavy-duty industrial connectors

Flexible, safe, and tough

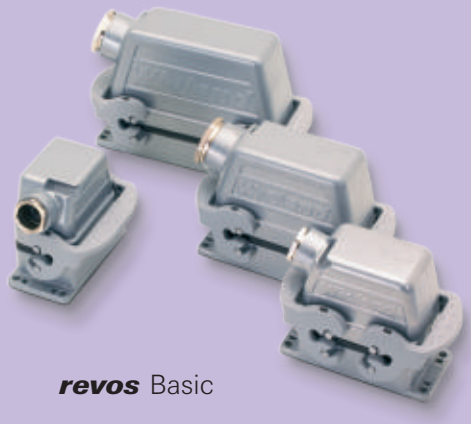
The heavy-duty plug connectors in the ***revos*** product group, with degree of protection IP 65, corrosion-resistant housings and locking levers made of stainless steel, are designed for especially tough application conditions such as those found in construction equipment.

The heavy duty connectors allow an easy and time-saving electric installation, protect electrical connections against physical impacts, and prevent the ingress of splashing water and dust.

Heavy duty connectors and construction equipment must be used year round outdoors. They have to stand up to constant vibrations and withstand high thermal and mechanical stresses such as falling rocks, dust, heat, and cold.



revos FLEX
Modular plug connector system



revos Basic

Advantages

- Degree of protection IP 65
- Robust and corrosion-resistant surface
- High temperature resistance
- Maintenance-friendly
- Fast and error free installation
- Custom solutions available with standard components

selos / fasis
DIN rail terminal blocks

The compact designs of construction equipment, specialty vehicles, and agricultural vehicles demand a modular terminal block system that optimize ever increasing wiring in ever decreasing available space. It also must stand up to all manners of extreme environmental influences.

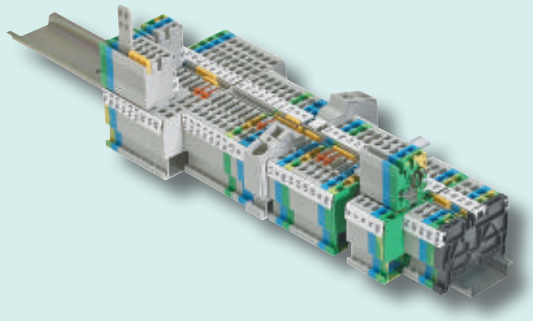
The ***selos*** and ***fasis*** DIN rail terminal block series can be used in a variety of applications and are designed for durability. Whether it be signal distribution, system control, or power input and distribution, the ***selos*** and ***fasis*** ranges from Wieland are the ideal components for your application.

Advantages

- High-performance
- Pluggable
- Comprehensive system
- Cost-effective

fasis CON Plug & Play

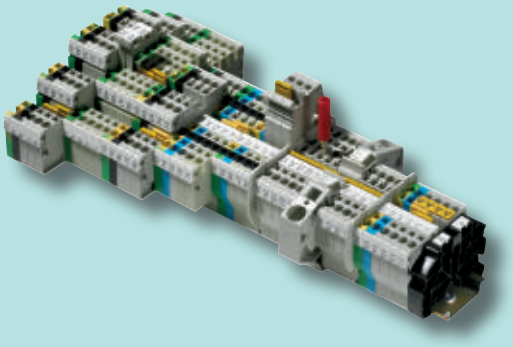
fasis CON is a DIN rail terminal block system with a pluggable outgoing feeder, which offers modular, cost-saving solutions with advantages in every phase of the service life of an electrical system. ***fasis*** CON features a vibration-safe spring clamp connection which guarantees contact reliability in all climatic and environmental conditions, thereby minimizing maintenance. Thanks to its high-capacity contacts of up to 32 A, this system is suitable for both signal transmission and for controlling motors in power circuits. ***fasis*** CON is a cost-effective, high-performance, and pluggable system solution.



fasis CON spring clamp connection

fasis WKFN DIN rail terminal block with tension spring connection

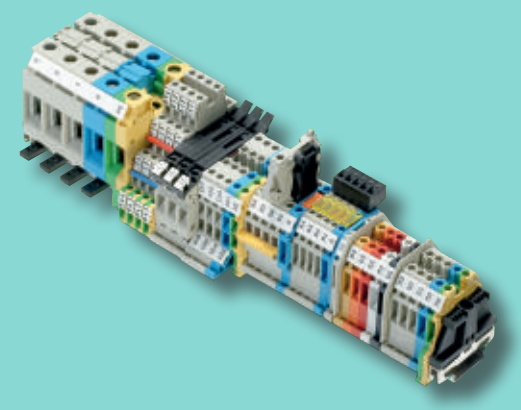
The DIN rail terminal blocks in the ***fasis*** product family are simple to use, and save time and money on wiring, and guarantee a vibration-safe and maintenance-free connection with predefined contact strength.
A real alternative to screws.



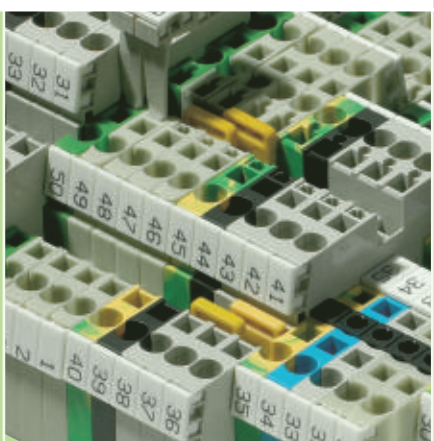
fasis WKFN tension spring connection

selos WKN DIN rail terminal blocks with screw technology

The DIN rail terminal block with the classic ***selos*** screw termination is solid and functional. With millions already in operation, it is well-known worldwide. The broad range of versions offers solutions for all types of application. The rising cage technology offers the highest contact strength at low feed through resistance.



selos WKN screw technology



Safety first!

A range of potential dangers must be eliminated using a reliable control and monitoring system. The range of *safety* products from Wieland works reliably to protect both people and machines.

safety – for people,equipment, and processes

Working with machines inevitably brings dangers with it; however, it has largely become possible to control these dangers through the use of specialized devices, including advanced safety technology.

When designing heavy duty construction equipment and specialty vehicles, attention must be paid to the occupational safety of the persons who will later be using them, starting during the development phase.

Specific damages can be avoided, for example, those caused by vibration, dirt and moisture. Retriggerable relays increase equipment uptime and availabilty, for example in conjunction with modular control and operator panels.

With its ***sensor*** PRO, ***S4000***, ***samos***, and ***samos*** PRO product lines, Wieland delivers safety-related products of the highest quality which, when installed in construction equipment and specialty vehicles, make a decisive contribution to occupational safety.

Wieland is also ready to support you with technical advice on standards and applications.

EN 474
Safety in earth-moving machines

EN 62061
EN ISO 13849-1
Machinery directive 2006/42/EG

Safety components

Suitable components, all the way from safety relay devices to compact safety controls, can be selected according to the level of complexity and type of diagnostics required.

Typical applications are:

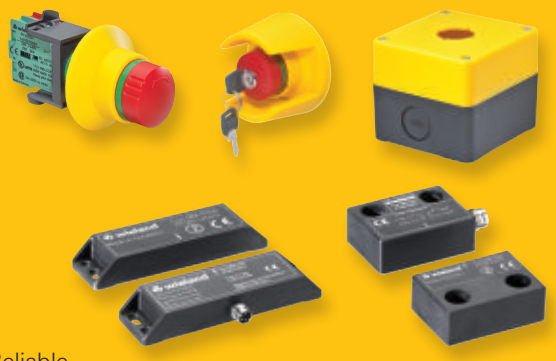
- **Emergency stop**
- **Safety switches**
- **Standstill and motion monitoring**
- **Evaluation of modular operating panels**

Advantages *S4000*, *samos*, *samos* PRO:

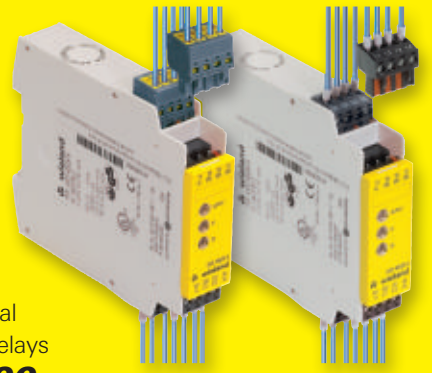
- Up to Category 4, SIL3, PLe
- Space-saving
- Flexibility
- Retriggerable OFF delay
- Time-saving during project planning and start-up
- Communications modules for diagnostics and remote maintenance
- MonoFlop function
- Fast shut-off
- Interconnectibility of safety functions
- Documentation support
- Numerous approvals (UL, GOST,...)
- SISTEMA library
- EPLAN macros

Advantages *sensor* PRO:

- Interruption prevention via vibration protection
- High degree of protection up to IP 69K
- Easy to adjust
- Easy to install



Reliable signal detection
sensor PRO



Universal safety relays
S4000

Modular safety system
samos®

Compact safety controlling
samos® PRO

interface
electronic components for construction equipment and commercial vehicles

Whenever current flows and signals are processed, the ***interface*** products from Wieland Electric display their unique strength. The broad range of relays, the components for power supply and overvoltage protection, and the interface and analog modules mean that all construction equipment and special vehicles can be perfectly equipped from the very beginning.

wipos power supply

A 24 V control voltage can be generated using the robust ***wipos*** power supplies. The devices are designed and approved worldwide for a broad temperature range from -25°C to +71°C. In this way, they provide full power up to a temperature of 60°C.

wietap lightning and overvoltage protection

With lightning and overvoltage modules from Wieland, a complete safety system can be created. The devices fulfill the most extreme demands made on their current carrying capacity. The modular assembly technology enables quick replacement of modules and meets the highest shock and vibration requirements.

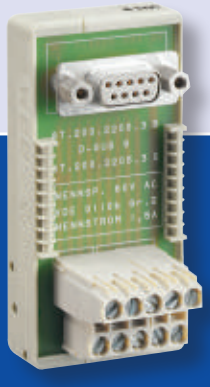
Photo: Wirtgen GmbH, Windhagen/Deutschland

wipos
Power supply

wietap
Lightning and overvoltage protection

flare
Coupling relays

Measuring and monitoring relays



Interface modules

flare coupling relays

Various coupling functions can be carried out by the broad range of products in the ***flare*** series. Pluggable coupling relays are also available with high shock and vibration impact certification in various designs, and fulfill the demands of the sector perfectly.

Measuring and monitoring relays

Whether voltage, current, phase, or temperature monitoring: Individual monitoring functions can be implemented both reliably and independently using Wieland's measuring and monitoring relays.

Interface modules

Various transfer functions must be implemented within the control cabinet. Our R&D team specializes in designing customer-specific electronic and electromagnetic Interface modules.

ricos TP

An automation system for tough applications

Suitable for construction equipment

ricos TP was developed for use in trains, heavy-duty construction equipment, crane technology, and ship-building, as well as for use in outdoor systems and manufacturing facilities. Wherever the functionality of the control system has to be adapted to the different requirements of the individual applications under harsh conditions, ***ricos*** TP is the perfect solution.

ricos TP safely stands up to the extreme mechanical stress in mobile equipment, caused by impacts, shocks, and extreme ambient temperatures and electromagnetic interference, at all times.

ricos TP **was specially developed for use in vehicles. During product design and product development, special care was taken to ensure the fulfillment of the standards for electronics in these sectors.**

State of the Art

ricos TP has been developed to the most up-to-date technology standards. The highly-qualified engineering team ensured that the latest technological advances in electronics and solid-state technology were applied, wherever possible when choosing the components and the system design.

Meets high requirements

- In extreme environmental conditions
- Railway service qualification according to EN 50155
- Temperature class Tx (-40 .. +70°C) and EN 50121-3-2

Modular and flexible

Thanks to the modular design of the automation system, they optimally adapt to your application without requiring much space or many I/Os.

Advantages

- Modular, expandable system
- Certified according to the "railway standard" EN 50155 and EN 50121
- Potential separation
- Communication via CANopen and Ethernet
- Programmable with CoDeSys according to IEC 61131-3
- Easily serviceable
- Digital input and output modules
- Analog input and output modules
- Pt100 temperature measurement module
- Connection via pluggable terminal blocks

podis LED
State-of-the-art lighting technology

Special applications require special solutions

Outfitting and assembling cranes with a lighting system places demanding requirements on the system's components.

The robust ***podis*** LED products are specially designed using high-powered LED technology, and manufactured for use in the harshest environments.

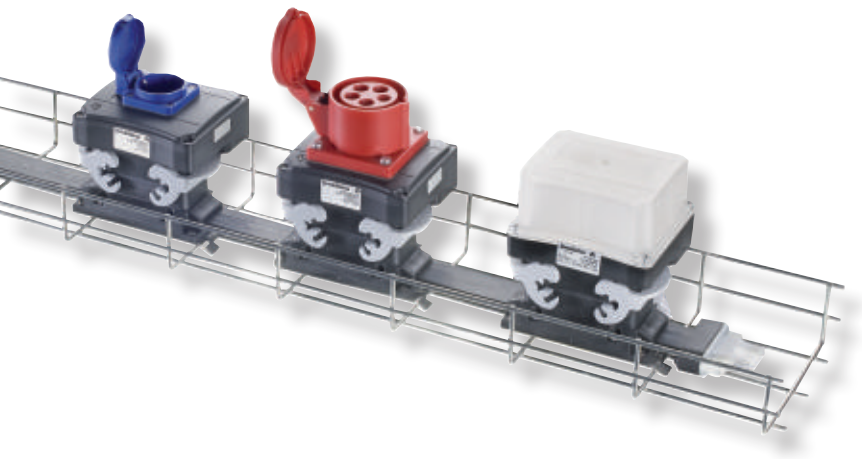
IIn addition to the well-known advantages of LED technology, ***podis*** LED provides a safe and fast pluggable connection system with an IP 65 rating. The robust design of the components is more than a match for the enormous stresses they must endure, including vibration, dirt, moisture, corrosion, large temperature fluctuations, as well as the stress of constant electrical load, variable frequencies and voltage fluctuations.

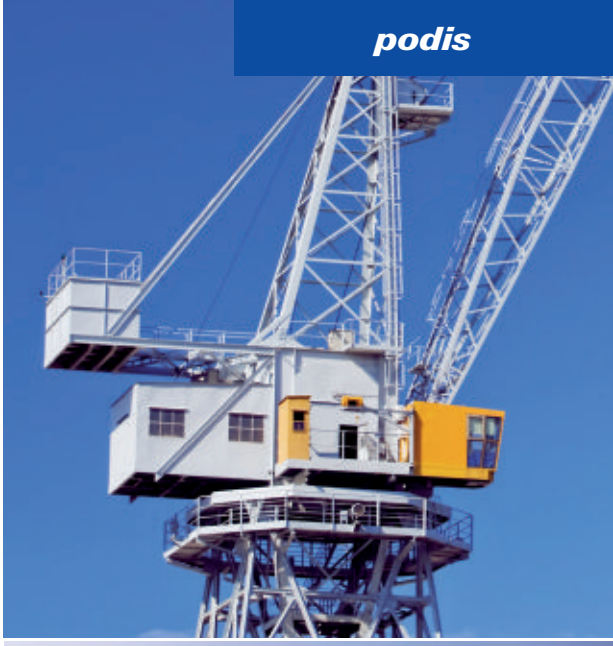
The ***podis*** LED lights have a service life of up to 50,000 operating hours – even at extreme ambient temperatures of -40 °C to +70 °C. The lights are designed for a wide voltage range of 15 to 30 V DC at full light output. This also means that the voltage drop caused by the crane's extended cable runs are compensated.

The ***podis*** LED lights can be connected either directly using the ***podis*** flat cable power bus, or via RST or ***revos*** MINI plug connectors.

Installation advantages

- termination without cutting or stripping
- fast, easy, and error-free installation
- scrap-free installation
- high IP splash proof rating
- fast commissioning





The *podis* flat cable power bus

The ***podis*** power bus is the innovative solution in decentralized power distribution. Power feed-in modules, distribution taps, maintenance power receptacles, fixed and pluggable branch devices, and pluggable devices (such as LED lights) are connected quickly, securely, and error-free to the uncut flat cable via insulation piercing contacts.

RST installation systems

RST is a complete installation system that significantly reduces installation time, as the distribution boxes, connectors and cables are delivered as pre-assembled. The installer simply needs to connect the components on site by plugging them together.

Both the initial installation and also any subsequent modifications or expansions can be completed quickly, potential wires errors are prevented, avoided, and the system's degree of protection can be reliable safeguarded.
Labor intensive cutting, outer jacket removal, wire stripping and termination tasks are no longer necessary.
This substantially reduces operational downtimes.

In the case of replacing lights, or regular maintenance work, the devices can be quickly and easily removed from the system, reducing downtime to a minimum.

Advantages of LED lighting

- Energy-saving LED technology
- Fulfills industrial requirements (DIN EN 60598-2-22)
- Suitable for extreme temperature ranges (-40 °C to +70 °C)
- Wide input voltage range (15 V DC to 30 V DC)
- Resistant to shock and vibrations

Software **TOOLS**

Wieland software perfects the application

Wieland Electric offers specially designed software for its individual products, making them easy to use and enabling fast configuration and product selection.

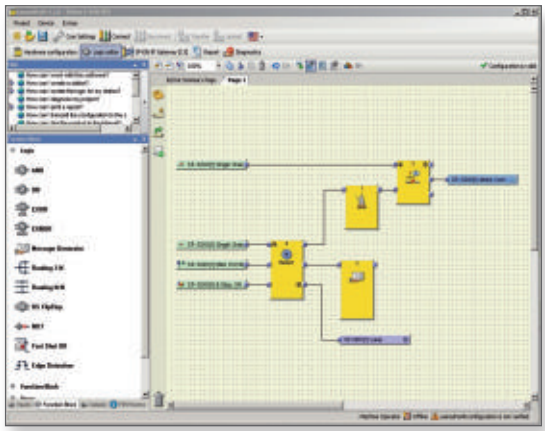
Wieland e-catalog

For further technical details, please use our new e-catalog online at:

http://eshop.wieland-electric.com

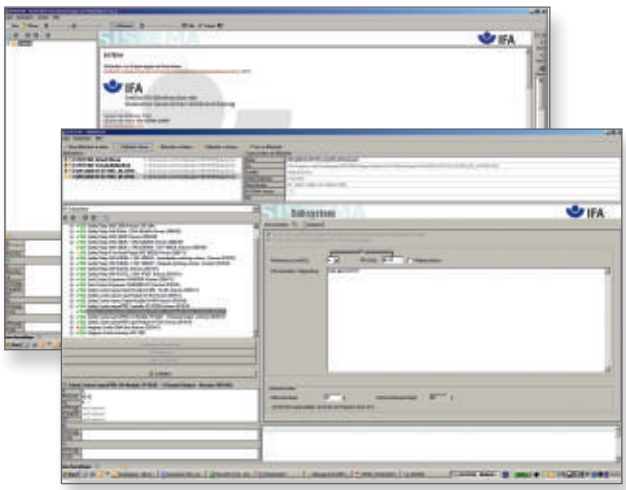
***revos* configurator**

This software tool facilitates the selection of heavy-duty connectors.



***samos*®PLAN**

This programming tool for ***samos***®PRO supports designers and machine manufacturers in the programming, diagnosis, and documentation of all the safety functions of a machine.



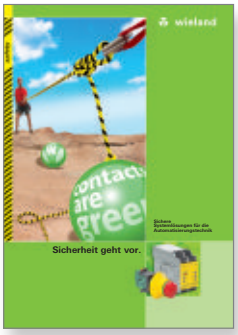
SISTEMA library

The **SISTEMA** library contains all safety components from Wieland Electric and, in combination with the **SISTEMA** software tool provided by the IFA (Institute for Occupational Safety and Health of the German Social Accident Insurance), allows the safety-related parameters of a machine's functions to be calculated according to EN ISO 13849-1.

wieplan
wiemarc

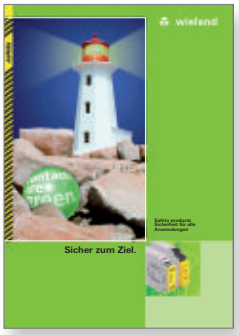
DIN rail terminal blocks: Planning and labeling with a system

Additional **INFORMATION**



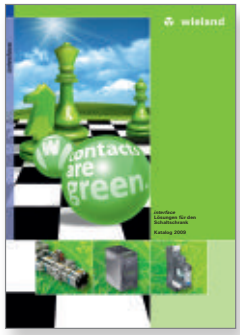
safety-catalog
Safe system solutions for automation technology

Order no. 0860.1



safety-overview
Safety for all applications

Order no. 0862.1

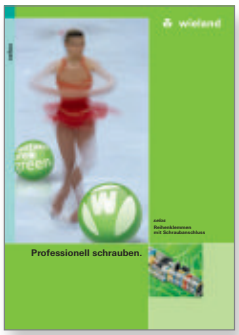


interface-catalog
Solutions for the control cabinet.

Order no. 0156.0

fasis catalog
DIN rail terminal blocks with tension spring connection

Order no. 0124.0



selos catalog
DIN rail terminal blocks with screw connection

Order no. 0125.0

revos
3 / 48-pole heavy-duty plug connectors

Order no. 0534.1

Electrical engineering solutions for the control cabinet

Order no. 0401.1

Support ⓘ Consultation

Hotline numbers

Sales: **Phone**

Questions for the Sales Department on delivery availability, delivery time and prices: +49 951 9324-990

Technical customer consulting:

Technical questions on product properties and possible uses of our products as well as how they function and accessories:

Automation technology sector:

- DIN rail terminal ***fasis, selos, taris***® +49 951 9324-991
- Safety technology ***safety*** +49 951 9324-999
- Distributed I/O, power supply, overvoltage protection, Measurement relays and monitoring relays, time relays, coupling relays, analog modules, interface modules ***interface*** +49 951 9324-995
- Decentralized power distribution ***podis***® +49 951 9324-998
- Industrial multipole connectors ***revos*** +49 951 9324-997
- Device terminals, European terminal strips, empty housings +49 951 9324-993
- PC board terminals ***wiecon*** +49 951 9324-994

Fax: +49 951 9326-991
e-mail: AT.TS@wieland-electric.com

Building installation technology sector:

- System connectors for building installation ***gesis***®***, gesis***® ELECTRONIC +49 951 9324-996
- DIN rail terminal blocks ***fasis***BIT, ***selos***BIT +49 951 9324-992

Fax: +49 951 9326-996
e-mail: BIT.TS@wieland-electric.com

For general information, news and our e-catalog, please refer to:

www.wieland-electric.com

Our subsidiaries

... and the addresses of our representations worldwide are available at:
www.wieland-electric.com

USA
Wieland Electric Inc.
49 International Road
Burgaw, N.C. 28425
Phone +1-910-259 5050
Fax +1-910-259 3691
sales@wielandinc.com
www.wielandinc.com

CANADA
Wieland Electric Inc.
2889 Brighton Road
Oakville, Ontario L6H 6C9
Phone +1-905-829 8414
Fax +1-905-829 8413
info@wieland-electric.ca

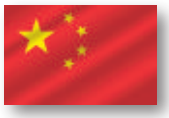
GREAT BRITAIN
Wieland Electric Ltd.
Riverside Business Centre,
Walnut Tree Close
GB-Guildford /Surrey GU1 4UG
Phone +44-1483-531 213
Fax +44-1483-505 029
sales@wieland.co.uk

FRANCE
Wieland Electric SARL.
Le Cérame, Hall 6
47, avenue des Genottes
CS 48313
F-95803 Cergy-Pontoise Cede
Tel. +33-1-30 32 07 07
Fax +33-1-30 32 07 17
infos@wieland-electric.fr

SPAIN
Wieland Electric S.L.
C/ Maria Auxiliadora 2 bajos
E-08017 Barcelona
Phone +34-93-252 3820
Fax +34-93-252 3825
ventas@wieland.es

ITALY
Wieland Electric S.r.l.
Via Edison, 209
I-20019 Settimo Milanese
Phone +39-02-48 91 63 57
Fax +39-02-48 92 06 85
info@wieland-electric.it

POLAND
Wieland Electric Sp. Zo.o.
Poznań Swadzim
ul. Św. Antoniego 8
62-080 Tarnowo Podgórne
Phone +48-61 84 09-101
Fax +48-61 84 07-166
office@wieland-electric.pl



CHINA
Wieland Electric Trading
Unit 2703
International Soho City
889 Renmin Rd., Huang Pu District
PRC-Shanghai 200010
Phone +86-21 63 555 833
Fax +86-21 63 550 090
info-shanghai@wieland-electric.cn

CZECH REPUBLIC
(Production)
Wieland Electric s.r.o.
Nadražní 1557
356 01 Sokolov
Phone +420-352 302 011
Fax +420-352 302 027

DENMARK
Wieland Electric GmbH
Brennerstraße 10–14
D-96052 Bamberg
Phone +45-70-26 66 35
Fax +45-70-26 66 37
sales@wieland-electric.dk

Informational material for ordering and for downloading from our websites

wieland

Headquarters:
Wieland Electric GmbH
Brennerstraße 10 – 14
D-96052 Bamberg

Sales and Marketing Center:
Wieland Electric GmbH
Benzstraße 9
D-96052 Bamberg

Phone +49 951 9324-0
Fax +49 951 9324-198
www.wieland-electric.com
www.gesis.com
info@wieland-electric.com

Industrial technology

Solutions for the control cabinet

- DIN rail terminal blocks
  - Screw, spring clamp or IDC connection technology
  - Wire cross sections up to 240 mm²
  - Numerous special functions
  - Software solutions interfacing to CAE systems
- Safety
  - Safety sensors
  - Safety relays
  - Modular safety systems with fieldbus link
- PLC and fieldbus components
  - Standard applications in IP 20
  - Increased environmental conditions with railroad and ship approvals
- Interface
  - Coupling relays, semiconductor switches
  - Measuring and monitoring relays
  - Timer and switching relays
  - Analog modules
  - Passive interfaces
  - Power supply units
  - Overvoltage protection

Solutions for field applications

- Remote automation technology
  - Power distribution
  - Fieldbus interfaces and motor starters
- Connectors for industrial applications
  - Square and round connectors
  - Aluminum or plastic housings
  - Degree of protection up to IP 68
  - Current-carrying capacity up to 100 A
  - Connectors for hazardous areas
  - Modular, application specific technology

PC board terminals and connectors

- Screw or spring clamp connection technology
- Spacings: 3.5 mm to 10.16 mm
- Reflow or wave soldering process

Building and installation technology

- Building installation systems
  - Main power supply connectors IP 20/IP 65 ... IP 68
  - Bus connectors
  - Combined connectors
  - Low-voltage connectors
  - Power distribution system with flat cables
  - Distribution systems
  - Bus systems in KNX, LON and radio technology
  - DIN rail terminal blocks for electrical installations
  - Overvoltage protection

contacts are green.

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Product Range